

CD-adapco helps Windgiant to bring revolutionary wind turbine design to market

http://www.cd-adapco.com/press_room/2010/01-28-10-windgiant.html

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In order to meet the world's energy demands in a sustainable manner, engineers need to deliver robust innovative technology. For 30 years, CD-adapco has enabled energy engineers to do just that in the 'traditional' energy sectors, and is now routinely applying the same advanced engineering simulation technology to the renewable energy sector. In a recent project, CD-adapco's Engineering Services team helped to demonstrate the feasibility of a revolutionary new wind-turbine concept using engineering simulation, giving its designers the confidence to invest in an full-scale prototype, and ultimately to bring the design into successful commercial production.



The Windgiant turbine utilizes revolutionary technology, in which wind flow is accelerated through a multi-bladed fan using a number of concentric aerodynamic shrouds. Compared to traditional three bladed turbine designs, the compact Windgiant turbine delivers a much higher energy per unit surface area and operates at much lower wind speeds (delivering energy at wind speeds as small as 1.5 m/s). Combined with its ultra-low noise energy production (less than 40 dB (A) at 12 meters), the compact design of the Windgiant turbine means that it is suitable for installation in urban residential settings, as well as industrial environments. Currently available in 10kW and 20kW, Windgiant is developing a much larger hybrid-tower which delivers 2.5MW from a combination of wind and solar power.



"CD-adapco's Engineering Services team helped us to demonstrate that our concept was valid, and allowed us to fine tune our design before investing in expensive physical prototypes," said Gerhard Wieser, the designer and innovator behind the Windgiant project. *"Having successfully installed a number of Windgiant turbines, I am delighted to report that the devices' behaviour is as predicted by the simulations, with each device delivering plentiful supplies of low-cost electricity in complex urban environments."*

"In order to maximize their efficiency, most current wind turbines were designed using extensive experimental model testing. Although experimental analysis provides considerable insight into the performance of a particular design, physical prototypes are expensive and time consuming to construct," said CD-adapco's Dennis Nagy Vice President of Business Development and Director, Energy Industries. "Engineering Simulation allows the designers of innovative concepts such as the Windgiant turbine to demonstrate their feasibility without committing unnecessary expenditure to the construction of prototypes."

Learn more

For more information on the Windgiant turbine, please visit www.windgiant.com

For more information on how CD-adapco software and services are used in the EnergySector, please visit:

www.cd-adapco.com/applications/energy.html

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